STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING

RICK SNYDER
GOVERNOR

RODNEY A. STOKES
DIRECTOR

Bovine Tuberculosis Program
Annual Legislative Report
October 1, 2010 – September 30, 2011

Prepared by the Wildlife Disease Lab, DNR Wildlife Health Section

This report is in response to PA 189 of 2010, Sec. 501: "From the funds appropriated in part 1, the department shall submit annual reports to the state budget director, the senate and house appropriations subcommittees on natural resources, and the senate and house fiscal agencies that provide detail about enforcement actions taken to eradicate bovine tuberculosis, the number of infected deer found, new science it is working on to detect bovine tuberculosis, and other relevant information about the department's efforts to address the presence of bovine tuberculosis in this state."

Disease Surveillance in Wildlife

Surveillance activities for bovine tuberculosis (bovine TB) in white-tailed deer included most of the deer head samples obtained through hunter submission at Department of Natural Resources (DNR) deer check stations during fall hunting seasons. Samples were also received from disease control permits, crop damage permits, and other out-of-season permits.

For white-tailed deer, 19 of the 4,916 animals submitted tested positive for bovine TB. Five of the 19 samples that tested positive for bovine TB included lungs and/or ribcages in addition to heads. Ten moose and 202 elk were submitted during this time period, and all tested negative for bovine TB. There is mandatory TB sample submission from all hunter-harvested elk.

Wild White-Tailed Deer Lab Results for Bovine TB by County, Oct. 1, 2010 - Sept. 30, 2011

County	Suspect	Positive
Alcona		12
Alpena		4
Cheboygan		1
Oscoda	1	2
TOTAL	**1**	**19**

Definitions:

Suspect - Bacterial culture is pending and intermediate testing has been positive; final results still pending.

Positive - Final culture results were received from the Michigan Department of Community Health (MDCH).

Negative - No lesions were found at the Wildlife Disease Lab, or culture results were final negative.

Wild White-Tailed Deer Tested for Bovine TB, by County
October 1, 2010 – September 30, 2011

County	Positive	Suspect	Total Tested
Alcona	12		759
Allegan			5
Alpena	4		886
Antrim			29
Arenac			22
Barry			1
Bay			3
Benzie			1
Berrien			1
Branch			2
Calhoun			1
Cass			2
Charlevoix			46
Cheboygan	1		71
Chippewa			2
Clare			4
Clinton			18
Crawford			6
Delta			3
Dickinson			9
Eaton			1
Emmet			179
Genesee			3
Gladwin			1
Gogebic			1
Grand Traverse			4
Gratiot			2
Huron			4
Ingham			4
Ionia			4
Iosco			309
Iron			9
Isabella			2
Jackson			2
Kalkaska			3
Kent			689
Lake			4
Lapeer			1
Livingston			1
Luce			2
Mackinac			1
Macomb			2
Manistee			2
Marquette			1
Mason			2
Mecosta			4
Menominee			30
Midland			2
Missaukee			2
Montcalm			6
Montmorency			433
Newaygo			1
Oakland			2
Ogemaw			76
Ontonagon			1
Osceola			7
Oscoda	2	1	302
Otsego			9
Presque Isle			510
Roscommon			7
Saginaw			1
Sanilac			4
Shiawassee			311
St. Clair			2
Tuscola			4
Van Buren			1
Wayne			2
Unknown County			95
Grand Total			**4,916**

Bovine TB Research Activities

Title: Bovine Tuberculosis Spatial Model for White-Tailed Deer

Status: This project is completed, and results are being prepared for publication in a scientific journal. The results were presented to the scientific community at the 60th international conference of the Wildlife Disease Association. That abstract follows:

MANAGEMENT OF BOVINE TUBERCULOSIS IN FREE-RANGING MICHIGAN WHITE-TAILED DEER: PREDICTIONS FROM A NEW SPATIALLY-EXPLICIT MODEL

David S.L. Ramsey, Arthur Rylah Institute, Heidelberg, Victoria, Australia; Daniel J. O'Brien, Melinda K. Cosgrove, Stephen M. Schmitt, Wildlife Disease Laboratory, Michigan Department of Natural Resources, Lansing, Michigan, USA; Brent A. Rudolph, Rose Lake Wildlife Research Center, Michigan Department of Natural Resources, East Lansing, Michigan, USA

Bovine tuberculosis (TB) is enzootic in free-ranging white-tailed deer (*Odocoileus virginianus*) in Michigan's northeast Lower Peninsula, most prevalent within Deer Management Unit (DMU) 452. While current broad management strategies (increased hunting pressure and restricted feeding and baiting) have been partially effective, refinement is needed. The extent to which hunter harvest must be increased to eradicate TB, and the timeframe to achieve eradication, are currently unknown. To address these issues, we developed a computer simulation model of TB in deer. Adapted from a model of TB in New Zealand brushtail possums (*Trichosurus vulpecula*), the model is spatially explicit (to account for variation in TB occurrence and management) and stochastic (to account for uncertainty). The model simulates behavior of individual deer with sex and age-specific home ranges and dispersal, and sex-specific TB transmission rates. Potential management scenarios include sex and age-specific hunter harvest, culling and vaccination, as well as local congregation of deer around bait and supplemental feed. Spatial variation in carrying capacity and the application of management are incorporated as GIS layers. Simulations in DMU 452 over thirty years suggest current MDNR management is unlikely to eradicate TB and will result in only a modest decrease in prevalence (<0.5%). At least a doubling of current harvest rates is required to eradicate TB in the presence of baiting. However, relatively small increases in harvest coupled with elimination of baiting rapidly decrease prevalence. Vaccination alone will only eradicate TB if 90% of susceptible deer are covered annually. TB establishment in a previously TB-free region is approximately eight times more likely if baiting occurs. Work to incorporate deer to cattle transmission is underway.

Title: Estimating the Risk of Bovine Tuberculosis Transmission From Free-Ranging Michigan White-Tailed Deer to Cattle Using a Spatially-Explicit Simulation Model

Principal investigators: Dan O'Brien, MDNR, Dave Ramsey, Arthur Rylah Institute for Environmental Research, Victoria, Australia

Status: Previous work by our group has determined that relatively small increases in harvest, coupled with elimination of baiting, rapidly decrease bovine TB prevalence in the deer herd. This raises an important question: If sufficient resources and public support cannot be mustered to reach bovine TB eradication, could a reduction in prevalence in the deer herd alone (without eradication) be sufficient to reduce the bovine TB transmission risk to cattle to a minimal level? And, if so, to what level must prevalence be reduced? Because the greatest remaining barriers to progress against bovine TB are sociopolitical, and may preclude eradication, specific answers to these questions are of critical significance and would provide a way forward for bovine TB management in Michigan. It is these questions that will be answered by this project. Data on cattle herd breakdowns and bovine TB prevalence in deer at specific locations over time will be used to optimize the model and derive the deer-to-cattle transmission coefficients. Resulting probabilities of cattle herd breakdowns per year will be used to derive bovine TB prevalence levels in deer (both in the township where the farm is located and averaged over DMU 452 as a whole) associated with varying levels of risk for cattle infection. This will inform natural resources policymakers of the risks to cattle farms likely to result from various deer management scenarios and allow agricultural policymakers to forecast resources likely to be necessary for given levels of transmission risk.

Meetings Attended by Wildlife Disease Lab Personnel and other TB Activities

- **Dr. Steve Schmitt, MDNR Wildlife Veterinarian, Wildlife Health Section Supervisor**
  - Michigan Department of Agriculture & Rural Development (MDARD)/DNR quarterly bovine TB program discussions
  - Presentation at United States Animal Health Association meeting in Minneapolis, MN
  - Conference call about Iosco County TB surveillance
  - Attended Michigan Farm Bureau meetings
  - Attended United States Department of Agriculture (USDA)-Veterinary Services TB review meetings and TB coordinator meetings
  - Bovine TB memorandum of understanding with MDARD/USDA
  - Meeting to discuss the cervid TB vaccination
  - Travel to Turtle Lake Club to collect and test deer for TB during annual herd health check
  - Conference call with USDA regarding bovine TB research
  - Meeting with cattle producers in Emmet Co.
  - TB workgroup meeting, Rose Lake Field Office
  - TB coordinator's meeting at USDA-Wildlife Services
  - Conference call on TB vaccine
  - Presented at Georgia Foreign Animal Disease Conference, Georgia
  - Conference call – Alpena News
  - Attended MDARD Commission meetings
  - Attended public meetings on baiting deer at Whittemore, Black River, and Alpena
  - Attended TB Advisory Committee meeting and conference call
  - Met with Senator Moolenaar to discuss bovine TB

- **Dr. Dan O'Brien, MDNR Wildlife Veterinarian**
  - Surveillance (deer heads) throughout the period
  - 10/11/10: Meeting with Dr. Rique Campa, Michigan State University (MSU), and Melinda Cosgrove regarding her master's project: "Modeling Vaccination of Michigan White-Tailed Deer for TB"
  - 10/13/10 – 2/22/11: Weekly/biweekly conference calls with MDARD and the USDA regarding the memorandum of understanding concerning split-state TB accreditation status for Michigan
  - 10/18/10: Tour of MDARD Risk-A-Syst (wildlife risk mitigation) demonstration farms in TB area of northeast Michigan
  - 10/18/10: Public meeting at Hillman Community Center regarding wildlife risk mitigation and TB in white-tailed deer in northeast Michigan
  - 10/19/10: Lecture to MSU student chapter of the American Association of Wildlife Veterinarians regarding TB in white-tailed deer
  - 10/25/10: Lecture to MSU students in Fisheries and Wildlife 893: Current Topics in Fisheries and Wildlife Seminar regarding TB management and policy
  - 11/15/10: Rode with Conservation Officer Warren MacNeill, Alcona County, to assess deer harvest, public attitudes, and baiting and feeding ban compliance in the TB endemic area
  - 12/6/10: Meeting with Dr. Rique Campa, MSU, and Melinda Cosgrove regarding her master's project: "Modeling Vaccination of Michigan White-Tailed Deer for TB"
  - 1/9/11-1/20/11: Research collaboration visit from Dr. Dave Ramsey, Arthur Rylah Institute for Environmental Research, Heidelberg, Victoria, Australia, regarding the spatial simulation modeling effort for TB in Michigan deer – Model was delivered, and Dr. Ramsey trained Dr. O'Brien on use and applications
  - 1/13/11: Presentation to the Michigan Natural Resources Commission with Dr. Dave Ramsey: "Management of Bovine TB in White-Tailed Deer Within Deer Management Unit 452: Predictions From a New Spatially-Explicit Model"
  - 2/10/11: Natural Resources Commission meeting regarding baiting and TB in white-tailed deer
  - 3/2/11: Teleconference lecture with senior agriculture and environment class, Alcona County High School, regarding TB in white-tailed deer
  - 3/11/11: Meeting with Directors and Deputy Directors of MDARD and DNR regarding implications of recent deer spatial model research results for TB management policy

- **Dr. Dan O'Brien, MDNR Wildlife Veterinarian (Cont.)**
  - 3/12/11: Presentation to Bovine Tuberculosis Update Seminar, Gaylord, MI: "Management of Bovine TB in White-Tailed Deer Within Deer Management Unit 452: Predictions From a New Spatially-Explicit Model"
  - 3/16/11: Presentation to Michigan Commission on Agriculture, Lansing, MI: "Management of Bovine TB in White-Tailed Deer Within Deer Management Unit 452: Predictions From a New Spatially-Explicit Model"
  - 3/20/11-3/23/11: Invited participant in Many Hosts of Mycobacteria: A Comparative Symposium--Biomarkers, sponsored by the National Institute of Allergy and Infectious Diseases, Tampa, FL
  - 4/21/11: TB lecture for veterinary students in Dr. Jean Tsao's class, Fisheries & Wildlife/Large Animal Clinical Sciences 821: Conservation Medicine regarding TB in white-tailed deer and other topics
  - 5/10/11: Meeting with Drs. Joaquin Vicente and Jose de la Fuente, Instituto de Investigación en Recursos Cinegéticos, Cuidad Real, Spain, regarding TB in wildlife in Michigan and Spain
  - 5/19/11: DNR representative at public meeting regarding the USDA's strategic plan for eradication of bovine TB, Lansing, MI
  - 6/29/11: Publication: O'Brien, D.J., Schmitt, S. M., Rudolph, B.A., Nugent, G. Recent Advances in the Management of Bovine Tuberculosis in Free-Ranging Wildlife, in *Veterinary Microbiology* 151(1-2):23-33
  - 6/29/11: Publication: O'Brien, D.J., Schmitt, S.M., Fitzgerald, S.D., Berry, D.E. Management of Bovine Tuberculosis in Michigan Wildlife: Current Status and Near Term Prospects, in *Veterinary Microbiology* 151(1-2):179-187
  - 6/29/11: Publication: Carstensen, M., O'Brien, D.J., Schmitt, S. M.. Public Acceptance as a Determinant of Management Strategies for Bovine Tuberculosis in Free-Ranging U.S. Wildlife, in *Veterinary Microbiology* 151(1-2):200-204
  - 7/7/11: Conference call with research collaborators on TB vaccination of white-tailed deer
  - 7/27/11: Conference call with research collaborators on TB vaccination of white-tailed deer
  - 8/2/11: Chaired DNR TB workgroup meeting
  - 8/18/11: Invited speaker at the 60th international conference of the Wildlife Disease Association, Quebec City, QC; Presented abstract: "Management of Bovine TB in White-Tailed Deer Within Deer Management Unit 452: Predictions From a New Spatially-Explicit Model"
  - 9/1/11: Research article in press: Fine, A.E., O'Brien, D.J., Winterstein, S., Kaneene, J.B. An Effort to Isolate *Mycobacterium bovis* From environmental Substrates During Investigations of Bovine Tuberculosis Transmission Sites (Cattle Farms and Wildlife Areas) in Michigan, USA. *ISRN Vet Sci* (in press).
  - 9/8/11: Presentation to DNR Law Enforcement Division district meeting, Grayling, MI: "Management of Bovine TB in White-Tailed Deer Within Deer Management Unit 452: Predictions From a New Spatially-Explicit Model"
  - Participated in drafting and reviewing a variety of posters, pamphlets, decals, and letters to businesses, schools, etc., concerning bovine TB

- **Melinda Cosgrove, MDNR Laboratory Scientist**
  - Submitted manuscript on summary of deer trapping project to Wildlife Research: "Live-Trapping and Bovine Tuberculosis Testing of Free-Ranging White-Tailed Deer for Targeted Removal"
  - Prepared manuscript for submission to the Wildlife Society Bulletin: "Modeling Vaccination and Targeted Removal of White-Tailed Deer in Michigan for Bovine Tuberculosis Control"
  - Participated in conference calls concerning TB vaccination trial studies
  - Participated in workgroup with MDARD on the incentive program they are promoting this hunting season
  - Prepared numerous maps for TB goals; testing results; TB-positive cattle maps; and four-county maps of surveillance, land use, and risk mitigation for MDARD
  - TB surveillance testing (deer heads)
  - November 2010 deer check
  - Traveled to Turtle Lake Club to collect and test deer for TB during annual herd health check

Disease Control Permit Program Update

A report has been produced analyzing the effectiveness of the disease control permit (DCP) distribution procedures and use by livestock producers, covering the period 2008-2010. The draft report is currently being reviewed by Wildlife Division and will be finalized and included in a subsequent legislative report. The annual 2010 and ongoing 2011 DCP reports are included in the appendix (See sections C and D).

Law Enforcement Division Activities

(Covering October 1, 2010 through September 30, 2011)

Compliance appears slightly less than in the previous year in the seven counties of the core TB area. Bait and feed piles appear smaller in size and generally scattered to avoid detection.

Conservation officers are fielding many questions regarding regulation changes to baiting and feeding in the Lower Peninsula outside of the core TB area and geographical changes to the core TB area (Otsego County removed). In June of 2011, the Michigan Natural Resources Commission voted to lift the deer baiting and feeding ban in the state's Lower Peninsula (with the exception of DMU 487). Located in the six-county bovine TB zone in the northeastern Lower Peninsula, DMU 487 includes the counties of Alcona, Alpena, Iosco, Montmorency, Oscoda, and Presque Isle.

Counties	RAP Bait/Feed Complaints	(Non-RAP) Bait Complaints	(Non-RAP) Feed Complaints	Tickets Issued	Warnings	Group Bait or Feed Patrols	Bait or Feed Flights	Incidental Arrests
Alcona	13	23	5	18	15	0	4	7
Alpena	8	9	10	36	21	1	4	2
Iosco	18	9	1	9	8	0	2	2
Montmorency	5	12	9	5	6	0	3	2
Oscoda	8	31	3	29	10	1	3	1
Otsego	3	59	1	22	11	0	1	5
Presque Isle	4	10	1	9	2	1	1	1
Totals	**59**	**153**	**30**	**128**	**73**	**3**	**18**	**20**

Patrol Efforts: Baiting enforcement takes up the majority of an officer's patrol efforts during fall deer hunting seasons in the core TB area.

Snow cover contributed to multiple feeding sites being active when officers located and checked them (mostly aircraft initiated sites). Several landowners claimed to be feeding turkeys but were actually feeding deer.

Complaints: RAP complaints are complaints called into the department's Report All Poaching hotline. Non-RAP complaints are calls to an officer from all other sources, such as citizens calling the officer or a department office, reports from other agencies, etc.. Non- RAP complaints were down approximately 27% compared to the same time period last year, with RAP complaints virtually unchanged.

Tickets & Warnings Issued: Tickets were down 25%, with warnings unchanged over the past year.

Data on incidental arrests is a new compilation implemented in October 2010. An incidental arrest is an arrest or ticket issued during bait or feed investigations. Examples are tagging or licensing violations, hunter orange violations, hunting hour violations, etc..

Aircraft Support: Air support was used in 18 instances, with snow cover supplementing the effectiveness of using the plane during the feeding flights after January 1st.

APPENDIX

A. MANAGEMENT OF BOVINE TUBERCULOSIS IN MICHIGAN DEER
2010 Surveillance Report
(Covering the period January 1, 2010 through December 31, 2010)

Dr. Stephen M. Schmitt, Veterinarian-in-Charge
Telephone: 517-336-5030, Email: schmitts@michigan.gov
State of Michigan Zoonotic Diseases website: http://www.michigan.gov/emergingdiseases

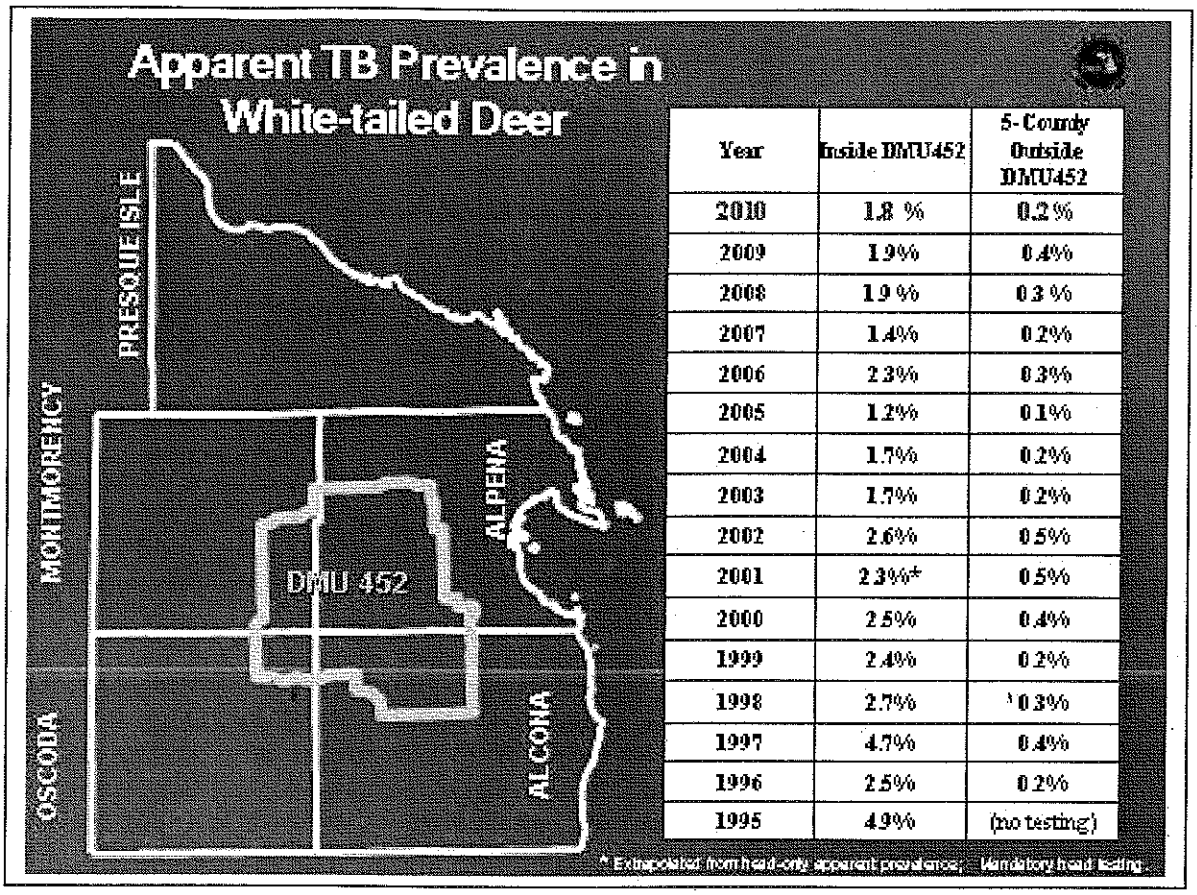
Since 1994, the State of Michigan has recognized a problem with *Mycobacterium bovis* in wild white-tailed deer from a fourteen county area in northeastern Lower Michigan. In 2010, surveillance activities for M. bovis continued, with an emphasis on the 5-county area of Alcona, Alpena, Montmorency, Oscoda and Presque Isle counties in the northern half of the Lower Peninsula (See statewide testing map on page 8). There was also increased surveillance in 10-mile radii around positive deer in Cheboygan, Emmet, Iosco and Shiawassee counties. Twenty-four white-tailed deer cultured positive from 4,946 deer submitted for testing (see summary table on page 10).

Since the index cases were first identified, over 189,188 free-ranging deer have been tested for bovine tuberculosis and 687 infected deer have been found. Increasingly, the spatial epidemiology of the disease is revealing a highly focal, clustered pattern. Approximately 96% of all positive deer identified to date originated from a five county area. Moreover, within that area, the vast majority of positive deer were from Deer Management Unit (DMU) 452. Even within DMU 452, the spatial arrangement of cases is highly clustered, in spite of the fact that sampling effort has been relatively uniform geographically.

White-tailed deer are the maintenance host and primary reservoir for TB in the Michigan outbreak. If eradication is to be achieved, control strategies must focus on the disease in deer. Strategies for eradication of TB from Michigan wildlife continue to focus on 1) reducing deer population densities to biological carrying capacity and 2) reducing artificial congregation of deer by restriction or elimination of baiting and feeding. These strategies have been implemented through provisions of a late firearm antlerless deer season, sufficient antlerless deer licenses to reduce the deer population, and by prohibition of deer baiting and feeding.

Population estimates based on reconstruction techniques similar to the sex–age–kill method described by Creed et al. (1984)[1] suggest that the deer population in the five county area has declined approximately 39% since 1995 (161,415 to 99,148). The achievement of this substantial population reduction highlights the critical role that hunters have played in the control of TB in Michigan. Nonetheless, persistent focal areas of high density population on private land remain problematic. Baiting and feeding have been prohibited in the seven counties from which 97% of all TB positive deer have originated. In September of 2008, feeding and baiting was banned in the whole Lower Peninsula. The overall scope of feeding has declined dramatically since 1997, with large-scale feeding largely a thing of the past. While some illegal baiting and feeding continues to occur, the size of these sites is substantially reduced, and it is hoped that heightened enforcement will reduce the practice further over the next several years.

While much work remains, substantial progress has been made towards eradication of TB from Michigan wildlife. Apparent prevalence in the core area of the outbreak (DMU 452) was 1.8% in 2010. Trend analysis of prevalence data from 1995 to 2010 indicates a statistically significant decreasing trend. However, prevalence and transmission rates have been flat for the last seven years (See apparent TB prevalence chart on page 8).



Year	Inside DMU452	5-County Outside DMU452
2010	1.8 %	0.2 %
2009	1.9%	0.4%
2008	1.9 %	0.3 %
2007	1.4%	0.2%
2006	2.3%	0.3%
2005	1.2%	0.1%
2004	1.7%	0.2%
2003	1.7%	0.2%
2002	2.6%	0.5%
2001	2.3%*	0.5%
2000	2.5%	0.4%
1999	2.4%	0.2%
1998	2.7%	0.3%
1997	4.7%	0.4%
1996	2.5%	0.2%
1995	4.9%	(no testing)

* Extrapolated from herd-only apparent prevalence; mandatory herd testing

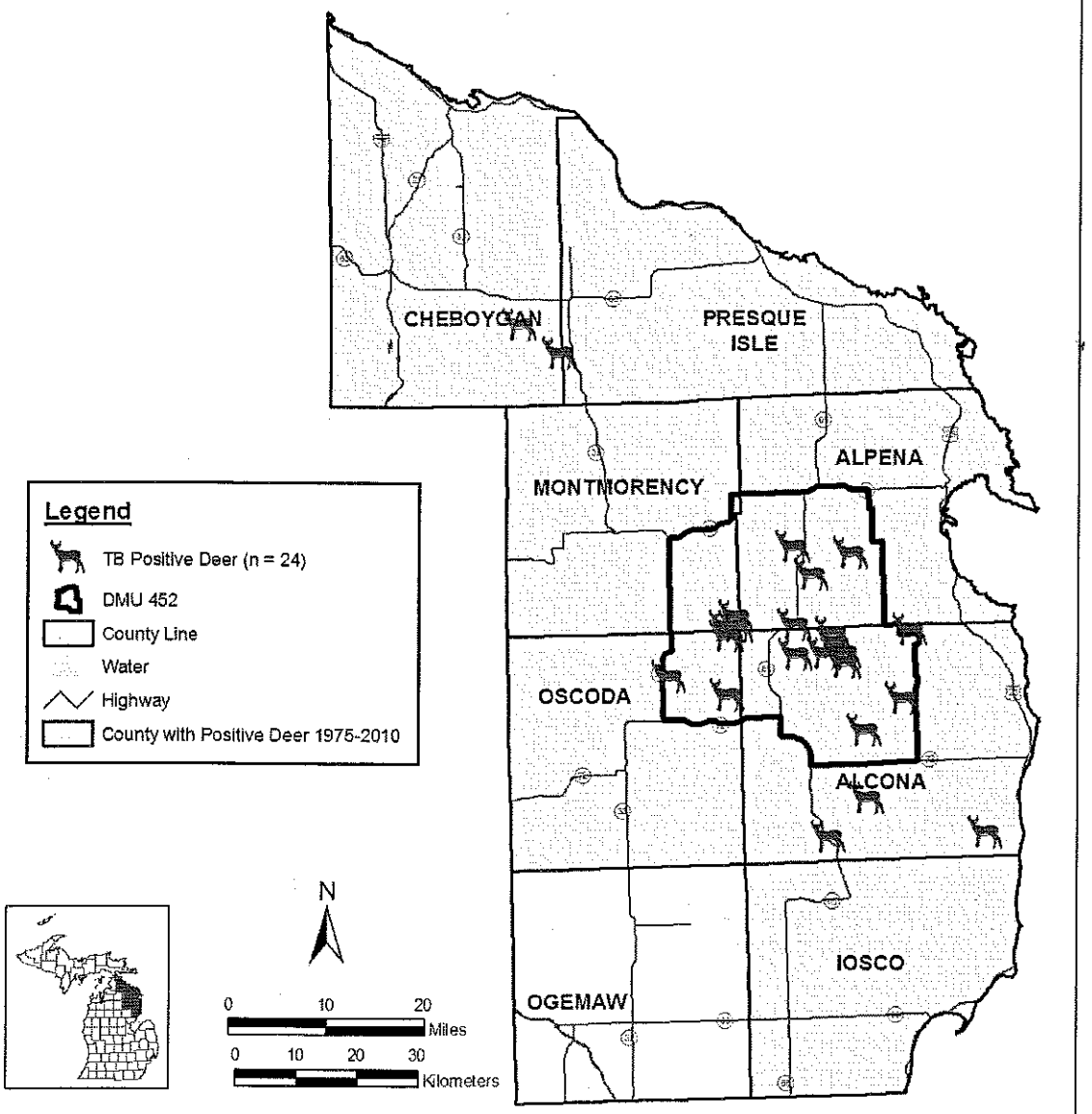
The intervention strategies have been successful in bringing down the average prevalence in DMU 452; however, there are clusters of disease that will be more difficult to manage. With that in mind, the State of Michigan is evaluating a new intervention strategy that may be more acceptable to many hunters and landowners. The new strategy is based on live-trapping and TB-testing of wild deer, and removal of positive animals. If a safe and effective TB vaccine could be developed, then captured deer that tested negative for TB could also be vaccinated before release. This strategy is not intended to replace initial strategies, but may assist them in eliminating TB from the deer herd in focal areas.

The DNR is working with USDA researchers in Ames, Iowa to develop a TB vaccine for use in wild deer. Preliminary results are encouraging, and the vaccine appears to give some protection from disease. Vaccinated groups of deer given the vaccine orally or subcutaneously had statistically significantly fewer visible TB lesions and less severe TB lesions than unvaccinated deer.

In summary, Michigan is showing progress in eradicating bovine TB from its wild deer population. However, this success is fragile, and we need to be diligent in maintaining our control strategies.

[1]Creed, W. A., F. Haberland, B. E. Kohn, and K. R. McCaffery. 1984. Harvest management: the Wisconsin experience. Pages 243–260 in L. K. Halls, editor. White-tailed deer ecology and management. Stackpole, Harrisburg, Pennsylvania, USA.

2010 Bovine Tuberculosis Survey Results
-Cervids-



B. Summary of Michigan Wildlife Bovine TB Surveillance

MDNR Wildlife Health Section

August 30, 2011

Initial Occurrences

In 1975 a 9 year-old female white-tailed deer from Alcona County, and in 1994 a 4 year-old male deer from Alpena County were submitted with lesions consistent with and testing positive for bovine TB.

White-tailed Deer TB Surveillance

Year	Number of Deer Positive	Total Deer Tested
Initial Occurrences	2	2
1995	18	403
1996	56	4,966
1997	73	3,720
1998	78	9,057
1999	58	19,496
2000	53	25,858
2001	61	24,278
2002	51	18,100
2003	32	17,302
2004	28	15,131
2005	16	7,364
2006	41	7,914
2007	27	8,316
2008	37	16,309
2009	31	5,722
2010	24	4,960
2011 - ongoing	1	290
Grand Total	**687**	**189,188**

Elk Surveillance

- 2,680 elk have been tested since 1996
- Five elk have tested positive
  - o 1 - Montmorency in 2006
  - o 2 - Presque Isle and Montmorency in 2003
  - o 1 - Montmorency in 2001
  - o 1 - Montmorency in 2000

Moose Surveillance

- 74 moose have been tested since 2003
- All have tested negative

Carnivore (Non-Cervid) Surveillance

- 1,517 carnivores (16 species) have been tested since 1996
- 43 tested positive for bovine TB
  - o 19 coyotes, 8 raccoons, 7 black bears, 4 bobcats, 3 red foxes, 2 opossums

2010 DISEASE CONTROL PERMIT PROGRAM UPDATE
4th Quarter Report: October 1st – December 31st and Final 2010 Report

Permits for Livestock Producers

This initiative was designed to make it simpler for livestock producers in areas where bovine tuberculosis (TB) is established to control deer numbers on their farms. Use of the disease control permits (DCPs) may help reduce the risk of transmission of TB from free-ranging deer to livestock. Current plans are to make the DCPs available in this manner for three years beginning January 2008, and then evaluate the effectiveness of the program.

Northeastern Michigan, the 5-County TB Area

Wildlife Disease Lab (WDL) mailed out DCPs to most livestock producers in Alcona, Alpena, Montmorency, Oscoda, and Presque Isle Counties. Each producer was initially mailed five kill tags; more may be available upon request when the original five are filled. The permits are valid for a year, and may be used year-round.

Northeastern Michigan, Outside the 5-County TB Area

Letters of invitation were mailed to many livestock producers in Antrim, Charlevoix, Cheboygan, Emmet, Iosco, Ogemaw, and Otsego Counties. With a few exceptions, these DCPs are not valid during any deer hunting season and expired on 8/31/2010.

Shiawassee County TB Surveillance Circle

Due to the finding of a TB-positive wild deer in Shiawassee County in the fall of 2007, letters explaining the program were mailed to Shiawassee and Clinton County cattle producers located in a 10-mile radius around the positive deer. The permits are valid for a year, and may be used year-round.

Permits for Private Landowners (Non-Agricultural) in DMU 452

Following changes to Section 5.7 of the Wildlife Conservation Order by the Natural Resources Commission in November 2007, private landowners, other than cattle producers, may be issued DCPs if they own property 1) in a county where TB is found in any species, or 2) within a 30-mile radius of a location where TB is found in any species.

In particular, participation in the DCP program is being offered to private landowners in DMU 452. Consequently, letters of invitation were mailed in Dec. 2009 to many hunt clubs and larger landowners in DMU 452 to inform them of this additional opportunity to take deer. These DCPs are not valid during any deer hunting season. Many of the permits expired on 4/30/2010; the rest expired on 9/30/2010.

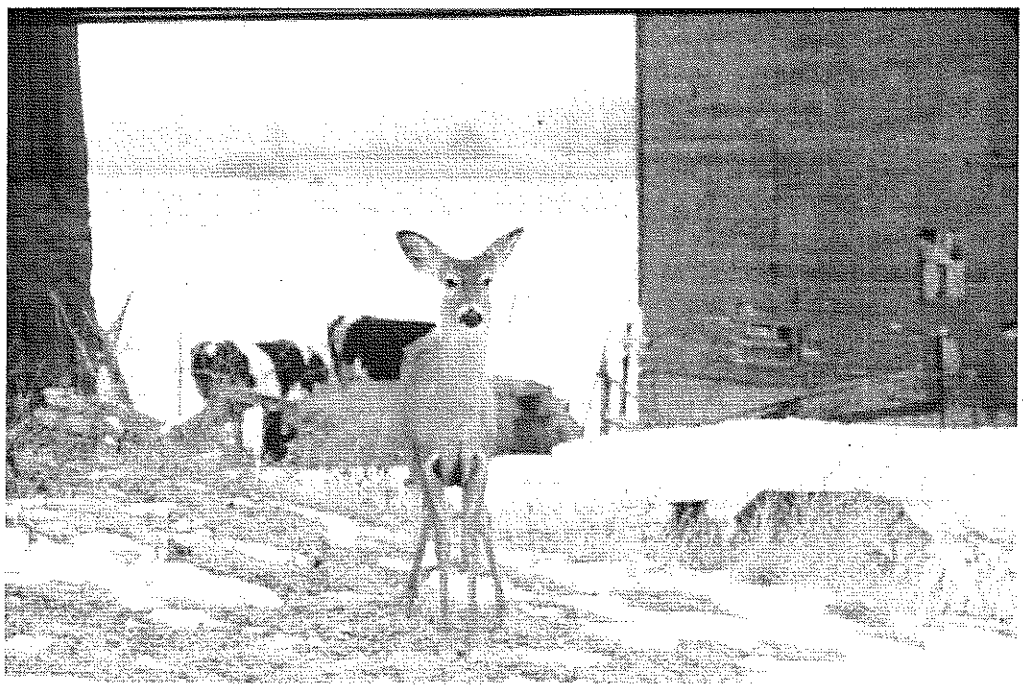
2010 MDNR Disease Control Permit Program as of 9/30/10

	Deer taken	Permittees who have taken deer [1]	Letters of invitation mailed	Permits mailed	Tags mailed	Signed permits received	Permittees requesting more tags [1]
5-County TB Area Agricultural Producers							
1st Quarter	65	26	0	510	2,605	111	4
2nd Quarter	3	3	0	2	10	6	0
3rd Quarter	32	17	0	2	25	17	3
4th Quarter	214	90	0	7	107	45	11
5-Co. Ag Cumulative	**314**	**108**	**0**	**521**	**2,747**	**179**	**16**
Northeastern Michigan, Outside the 5-County Agricultural Producers							
1st Quarter	139	33	317	157	890	79	11
2nd Quarter	16	6	0	7	46	6	2
3rd Quarter	32	14	0	3	30	6	3
4th Quarter	12	6	0	2	15	1	0
NE Mich. Ag Cumulative	**199**	**49**	**317**	**169**	**981**	**92**	**16**
DMU 452 Non-Agricultural Landowners							
1st Quarter	142	14	151	37	410	25	0
2nd Quarter	0	0	0	0	0	0	0
3rd Quarter	1	1	0	0	0	2	0
4th Quarter	0	0	0	0	0	0	0
DMU 452 Non-Ag Cumulative	**143**	**15**	**151**	**37**	**410**	**27**	**0**
Shiawassee Circle Agricultural Producers							
1st Quarter	13	6	137	40	210	19	0
2nd Quarter	0	0	0	1	5	0	0
3rd Quarter	2	2	0	3	25	3	1
4th Quarter	34	18	0	2	20	7	2
Shiawassee Cumulative	**49**	**19**	**137**	**46**	**260**	**29**	**3**
2010 Grand Total	**705**	**191**	**605**	**773**	**4,398**	**327**	**35**

[1]The same permittee may have shot deer or requested more tags during multiple quarters. The cumulative totals reflect the number of unique permittees shooting deer or requesting more tags.

2010 Bovine TB Laboratory Testing Results for Wild Deer Taken on DCPs

	1st Quarter Jan. 1 – Mar. 31		2nd Quarter Apr. 1 – Jun. 30		3rd Quarter Jul. 1 – Sep. 30		4th Quarter Oct. 1 – Dec. 31		Grand Total
County Name	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	
Alcona	16		3		1		33	2	55
Alpena	62	1	9		4		104		180
Antrim	12		17		16		3		48
Charlevoix			5		14		4		23
Cheboygan	33	1	11				3		48
Emmet	8		5		2		3		18
Iosco					1				1
Montmorency	78	3					14		95
Ogemaw	12		2						14
Oscoda	3	1	1				6		11
Otsego	1				1				2
Presque Isle	17		3				37		57
Clinton	1						9		10
Shiawassee	9						19		28
Grand Total	**252**	**6**	**56**	**0**	**39**	**0**	**235**	**2**	**590**



5.77 Disease control permit; standards, conditions, records; unlawful acts.

Sec. 5.77. (1) Disease control permits may be issued to any owner of property in a county with a confirmed case of bovine tuberculosis or lands within 30 miles of a confirmed case of a disease.

(2) Landowners may apply for a permit by filing an application with the department. This application will include the names of desired authorized designees. This application, once signed by both the landowner and an authorized natural resources representative, shall become the permit. The number of tags issued will be determined by the department of natural resources representative.

(3) Property inspections may be conducted under the direction and at the discretion of the authorized department of natural resources representative.

(4) A disease control permit shall not be valid except during the time period for which it is authorized.

(5) The permittee shall keep records as may be required by the director and present them for inspection at the request of a conservation officer or wildlife biologist.

(6) The permittee or authorized designee shall make a reasonable effort to retrieve all deer shot under the authority of a permit.

(7) The permittee or authorized designee shall have a copy of the permit and a valid unused tag on their person when taking or attempting to take deer.

(8) A person killing a deer shall immediately affix the tag to the gambrel or jaw of the deer. The permittee or authorized designee, upon killing a deer, shall notify the department as instructed on the permit.

(9) All deer killed under a disease control permit shall be disposed of as specified by the permit. If required, deer heads shall be submitted to the department by the permittee.

(10) The permit shall be valid within the ownership boundaries of the permittee or as stated on the permit.

(11) Permits shall be valid for deer of either sex as noted in the permit. If the taking of an antlered deer is allowed by the permit, all antlers shall be submitted to the department.

5.78 Disease control permit, prohibited acts.

Sec. 5.78. (1) The permittee must designate no more than 3 authorized designees to implement the provisions of the permit unless additional designees are approved by the authorized department of natural resources representative.

(2) It shall be unlawful for a permittee or an authorized designee to:

(a) Kill more than the number of deer authorized by the permit.

(b) Possess a deer killed under the authority of a permit without having a valid tag attached to the deer.

(c) Take or attempt to take a deer within the permit boundaries unless in possession of a valid tag. The tag shall be presented upon demand to a representative of the director.

(d) Use a firearm other than a centerfire rifle or shotgun with slugload.

(e) Possess an uncased or loaded firearm in a vehicle.

(f) Take or attempt to take a deer using an artificial light or from 1/2 hour after sunset to 1/2 hour before sunrise unless approved by the wildlife management unit and district law enforcement supervisors.

(g) Take or attempt to take a deer in any area except that location described on the permit.

(h) Take or attempt to take a deer not authorized by the permit.

(i) Retain antlers from deer taken on the permit if antlered deer have been approved in the permit.

(3) It shall be unlawful for any person other than the permittee or an authorized designee to take or attempt to take deer under the authority of a valid permit.

5.79 Disease control permit; revocation, suspension.

Sec. 5.79. (1) Pursuant to section 40118 of part 401, wildlife conservation, Act No. 451 of the Public Acts of 1994, as amended, being section 324.40118 of the Michigan Compiled Laws, a conviction for a violation of the provisions of sections 5.76 to 5.78 of this order shall result in the revocation of a permit.

(2) A modification, suspension, or revocation of a permit is subject to the provisions of section 40114 of part 401, wildlife conservation, Act No. 451 of the Public Acts of 1994, as amended, being section 324.40114 of the Michigan Compiled Laws.

(3) Failure of the permittee or an authorized designee to comply with the permit provisions will make the permittee ineligible to receive disease control permits, deer damage control permits, or deer management assistance permits (DMAP) for the following calendar year.

2011 DISEASE CONTROL PERMIT PROGRAM UPDATE
1st and 2nd Quarter Report: October 1st – June 30th

Permits for Livestock Producers

This initiative was designed to make it simpler for livestock producers in areas where bovine tuberculosis (TB) is established to control deer numbers on their farms. Use of the disease control permits (DCPs) may help reduce the risk of transmission of TB from free-ranging deer to livestock. Current plans are to make the DCPs available in this manner for three years beginning January 2008, and then evaluate the effectiveness of the program.

Northeastern Michigan, the 5-County TB Area

Wildlife Disease Lab (WDL) mailed out DCPs to livestock producers in Alcona, Alpena, Montmorency, Oscoda, and Presque Isle counties who participated in 2010 by returning a signed DCP. Producers were assigned five permit tags; more may be available upon request when the original five are filled. The permits are valid for a year, and may be used year-round.

Northeastern Michigan, Outside the 5-County TB Area

DCPs were mailed to livestock producers in Antrim, Charlevoix, Cheboygan, Emmet, Iosco, Ogemaw, and Otsego Counties who participated in 2010 by returning a signed DCP. With a few exceptions, these DCPs are not valid during any deer hunting season and expire on 8/31/2011. Since there is no bovine TB testing goal for Ogemaw County in 2011, those producers are not required to submit the deer heads for TB testing.

Shiawassee County TB Surveillance Circle

Due to finding of a TB-positive wild deer in Shiawassee County in the fall of 2007, letters explaining the program were mailed to Shiawassee and Clinton County cattle producers located in a 10-mile radius around the positive deer. The permits are valid for a year, and may be used year-round.

Permits for Private Landowners (non-agricultural) in DMU 452

Following changes to Section 5.7 of the Wildlife Conservation Order by the Natural Resources Commission in November 2007, private landowners, other than cattle producers, may be issued DCPs if they own property 1) in a county where TB is found in any species, or 2) within a 30-mile radius of a location where TB is found in any species.

In particular, participation in the DCP program is being offered to private landowners in DMU 452. Consequently, letters of invitation for 2011 permits were mailed in December 2010 to many hunt clubs and larger landowners in DMU 452 to inform them of this additional opportunity to take deer. These DCPs are not valid during any deer hunting season. Many of the permits expired on 4/30/2011; the rest expire on 9/30/2011.

2011 MDNR Disease Control Permit Program as of 6/30/11

	Deer taken	Permittees who have taken deer [1]	Letters of invitation mailed	Permits mailed	Tags mailed	Signed permits received	Permittees requesting more tags [1]
5-County TB Area Agricultural Producers							
1st Quarter	73	20	0	185	970	90	5
2nd Quarter	11	2	0	4	70	8	8
3rd Quarter							
4th Quarter							
5-Co. Ag Cumulative	**84**	**21**	**0**	**189**	**1,040**	**98**	**10**
Northeastern Michigan, Outside the 5-County Agricultural Producers							
1st Quarter	77	20	0	113	567	68	9
2nd Quarter	21	7	0	4	35	2	7
3rd Quarter							
4th Quarter							
NE Mich. Ag Cumulative	**98**	**24**	**0**	**117**	**602**	**70**	**14**
DMU 452 Non-Agricultural Landowners							
1st Quarter	65	6	125	41	414	17	3
2nd Quarter	1	1	0	0	0	0	0
3rd Quarter							
4th Quarter							
DMU 452 Non-Ag Cumulative	**66**	**7**	**125**	**41**	**414**	**17**	**3**
Shiawassee Circle Agricultural Producers							
1st Quarter	5	1	137	39	205	16	2
2nd Quarter	0	0	0	0	0	0	0
3rd Quarter							
4th Quarter							
Shiawassee Cumulative	**5**	**1**	**137**	**39**	**205**	**16**	**2**
2010 Grand Total	**253**	**53**	**262**	**386**	**2,261**	**201**	**29**

[1]The same permittee may have shot deer or requested more tags during multiple quarters. The cumulative totals reflect the number of unique permittees shooting deer or requesting more tags.

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	1st Quarter Jan. 1 – Mar. 31		2nd Quarter Apr. 1 – Jun. 30		3rd Quarter Jul. 1 – Sep. 30		4th Quarter Oct. 1 – Dec. 31		Grand Total
County Name	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	
Alcona	7		4						
Alpena	56	1	7						
Antrim	6		0						
Charlevoix	5		11						
Cheboygan	24		4						
Emmet	0		0						
Iosco	0		0						
Montmorency	38		0						
Ogemaw	2		0						
Oscoda	8		0						
Otsego	0		0						
Presque Isle	17		0						
Clinton	0		0						
Shiawassee	5		0						
Grand Total	**168**	**1**	**26**						